



Complete Summary

GUIDELINE TITLE

Pediatric eye evaluations: I. Screening. II. Comprehensive ophthalmic evaluation.

BIBLIOGRAPHIC SOURCE(S)

American Academy of Ophthalmology Pediatric Ophthalmology/Strabismus Panel. Pediatric eye evaluations: I. Screening; II. Comprehensive ophthalmic evaluation. San Francisco (CA): American Academy of Ophthalmology; 2007. 32 p. [89 references]

GUIDELINE STATUS

This is the current release of the guideline.

It updates a previous version: American Academy of Ophthalmology Pediatric Ophthalmology Panel. Pediatric eye evaluations. San Francisco (CA): American Academy of Ophthalmology; 2002 Oct. 22 p. [36 references]

All Preferred Practice Patterns are reviewed by their parent panel annually or earlier if developments warrant and updated accordingly. To ensure that all Preferred Practice Patterns are current, each is valid for 5 years from the "approved by" date unless superseded by a revision.

COMPLETE SUMMARY CONTENT

SCOPE
METHODOLOGY - including Rating Scheme and Cost Analysis
RECOMMENDATIONS
EVIDENCE SUPPORTING THE RECOMMENDATIONS
BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS
QUALIFYING STATEMENTS
IMPLEMENTATION OF THE GUIDELINE
INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT
CATEGORIES
IDENTIFYING INFORMATION AND AVAILABILITY
DISCLAIMER

SCOPE

DISEASE/CONDITION(S)

Childhood ocular conditions including:

- Congenital cataract

- Retinopathy of prematurity
- Congenital glaucoma
- Retinoblastoma
- Strabismus
- Amblyopia
- Refractive errors (myopia, hyperopia, astigmatism)

GUIDELINE CATEGORY

Evaluation
Screening

CLINICAL SPECIALTY

Family Practice
Ophthalmology
Pediatrics

INTENDED USERS

Advanced Practice Nurses
Allied Health Personnel
Health Plans
Nurses
Physician Assistants
Physicians

GUIDELINE OBJECTIVE(S)

Pediatric Eye Screening

To identify children who may have eye or visual abnormalities or risk factors for developing eye or vision problems, and refer them for a comprehensive pediatric ophthalmic eye evaluation and to address the following goals:

- Describe techniques for periodic eye and vision screening examinations for children, documentation of which includes the following information:
 - Risk factors for eye and visual abnormalities
 - Level of vision in each eye individually
 - Assessment of ocular alignment
 - Assessment for the presence of ocular structural abnormalities
- Communicate screening results and follow-up plan to family/caregiver
- Refer all children who fail screening or who cannot be successfully screened at their second attempt; physicians or other practitioners providing ongoing care of the child should verify at the next visit that the recommended comprehensive eye examination has taken place
- Educate screening personnel

Comprehensive Ophthalmic Evaluation

To evaluate abnormalities detected by screening, to identify risk factors for disease, to detect and diagnose sight- and health-threatening disease, and to initiate a plan of treatment as necessary and to address the following goals:

- Identify risk factors for ocular disease
- Identify systemic disease based on associated ocular findings
- Identify factors that may predispose to visual loss early in a child's life
- Determine the health status of the eye, visual system and related structures, and assess refractive errors
- Discuss the nature of the findings of the examination and their implications with the parent/caregiver, primary care physician and, when appropriate, the patient
- Initiate an appropriate management plan (e.g., treatment, counseling, further diagnostic tests, referral, follow-up, early intervention services)

TARGET POPULATION

Newborns and children through age 18 years

INTERVENTIONS AND PRACTICES CONSIDERED

Pediatric Eye Screening

1. History
2. Screening examination
 - Examination of the red reflex
 - External inspection
 - Pupil examination
 - Visual acuity
 - Corneal light reflection (Hirschberg) test
 - Cover testing for ocular alignment and motility
3. Referral, if necessary

Comprehensive Pediatric Medical Eye Evaluation

1. History
2. Examination
 - Assessment of visual acuity and fixation pattern
 - Ocular alignment and motility
 - Red reflex or binocular red reflex (Brückner) test
 - Pupil examination
 - External examination
 - Anterior segment examination
 - Cycloplegic retinoscopy/refraction
 - Funduscopy examination
 - Binocularity/stereoacuity testing
 - Sensorimotor evaluation
3. Additional tests
 - Color-vision testing
 - Intraocular pressure management
 - Central corneal thickness measurement
 - Visual field testing

- Photography
4. Diagnosis and management
- Follow-up evaluation
 - Referral to a geneticist, if indicated
 - Prescription of eyeglasses

MAJOR OUTCOMES CONSIDERED

- Visual acuity and binocular visual function
- Visual loss

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

In the process of revising this document, a detailed literature search in Medline and the Cochrane Library for articles in the English language was conducted on the subject of pediatric eye evaluation for the years 2001 to 2006.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Strength of Evidence Ratings

Level I: Includes evidence obtained from at least one properly conducted, well-designed randomized controlled trial. It could include meta-analyses of randomized controlled trials.

Level II: Includes evidence obtained from the following:

- Well-designed controlled trials without randomization
- Well-designed cohort or case-control analytic studies, preferably from more than one center
- Multiple-time series with or without the intervention

Level III: Includes evidence obtained from one of the following:

- Descriptive studies

- Case reports
- Reports of expert committees/organization (e.g., Preferred Practice Patterns [PPP] panel consensus with external peer review)

METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses
Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

The results of a literature search on the subject of pediatric eye evaluation were reviewed by the Pediatric Ophthalmology/Strabismus Panel and used to prepare the recommendations, which they rated in two ways. The panel first rated each recommendation according to its importance to the care process. This "importance to the care process" rating represents care that the panel thought would improve the quality of the patient's care in a meaningful way. The panel also rated each recommendation on the strength of the evidence in the available literature to support the recommendation made.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Ratings of Importance to Care Process

Level A, defined as most important

Level B, defined as moderately important

Level C, defined as relevant, but not critical

COST ANALYSIS

Guideline developers reviewed published cost analyses.

METHOD OF GUIDELINE VALIDATION

Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

These guidelines were reviewed by Council and approved by the Board of Trustees of the American Academy of Ophthalmology (September 8, 2007).

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Ratings of importance to the care process (A-C) and ratings of strength of evidence (I-III) are defined at the end of the "Major Recommendations" field.

Screening

Age-appropriate eye and vision evaluations should be performed in the newborn period and at all subsequent health supervision visits, [A:III] because different childhood eye problems may be detected at each visit and new problems can arise during childhood.

At a child's first examination by a new primary care provider, a history of risk factors for eye and vision abnormalities should be elicited. [A:III] At each scheduled well-child examination, the primary care provider should ask the parent/caregiver about the baby's visual interactions and possible eye or vision problems. [A:III]

The screening examination should include examination of the red reflex to detect abnormalities of the ocular media; external inspection to detect ocular abnormalities; pupil examination; visual acuity on an age-appropriate basis; and, after 6 months of age, the corneal light reflection test (Hirschberg reflex) and cover testing for ocular alignment as well as motility testing. [A:III]

Children who **fail** a screening should be referred for a comprehensive pediatric ophthalmic evaluation after the **first** screening failure. [A:III]

If a child is unable to cooperate for vision testing at 3 years of age, a second attempt should be made within 6 months. [A:III] If the child is 4 years old, a second attempt should be made within the month (American Academy of Pediatrics, 2003). [A:III] Although the child may be re-screened if screening is inconclusive or unsatisfactory, undue delays should be avoided; if retesting is inconclusive, referral for a comprehensive ophthalmic evaluation is indicated (Maguire & Vision in Preschoolers Study Group, 2007). [A:III]

Referral Plan

If eye and vision abnormalities or their risk factors are suspected or identified at a screening examination, an appropriate referral plan should be initiated and recorded. [A:III] The tables below list specific examples of indications for a referral for a comprehensive pediatric ophthalmic evaluation.

Comprehensive Ophthalmic Evaluation

History

Although a thorough history generally includes the following items, the exact composition varies with the patient's particular problems and needs:

- Demographic data, including identification of parent/caregiver, and patient's gender and date of birth [A:III]
- Documentation of identity and relationship of historian [B:III]
- The identity of other pertinent health care providers [A:III]
- The chief complaint and reason for the eye evaluation [A:III]
- Current eye problems [A:III]
- Ocular history, including other eye problems, diseases, diagnoses, and treatments [A:III]
- Systemic history; birth weight; prenatal and perinatal history that may be pertinent (e.g., alcohol, drug, and tobacco use during pregnancy); past hospitalizations and operations; general health and development [A:III]
- Current medications and allergies. [A:III]
- Family history of eye conditions and relevant systemic diseases. [A:III] A social history, including racial or ethnic heritage, is germane for certain diagnostic considerations such as sickle cell anemia or Tay-Sachs disease.
- Review of systems. [B:III]

Examination

Documentation of the child's level of cooperation with the examination can be useful in interpreting the results and in making comparisons among the examinations over time. In general, the examination may include the following elements:

- Assessment of visual acuity and fixation pattern [A:III]
- Ocular alignment and motility [A:III]
- Red reflex or binocular red reflex (Brückner) test [A:III]
- Pupil examination [A:III]
- External examination [A:III]
- Anterior segment examination [A:III]
- Cycloplegic retinoscopy/refraction [A:III]
- Funduscopy examination [A:III]

Other tests that may be indicated in selected patients:

- Binocularity/stereoacuity testing
- Sensorimotor evaluation (e.g., strabismus, suspected neurological disease)

Diagnosis and Management

Category I: Low Risk

When the evaluation is normal, the ophthalmologist reassures the patient and the parent/caregiver and advises as to the appropriate interval for re-examination. Although this group of patients is considered low risk, periodic eye screening by the primary care provider should be continued. [A:III] Patients should undergo a comprehensive pediatric ophthalmic evaluation if new ocular symptoms, signs, or risk factors for ocular disease develop. [A:III]

Category II: High Risk

When the evaluation reveals risk factors for developing ocular disease or signs that are suggestive of an abnormal condition, the patient is considered to be at high risk. The ophthalmologist should determine an appropriate follow-up interval for each patient based on the findings. [A:III]

Category III: Requiring Intervention

Most patients with abnormal signs and symptoms can be diagnosed and treated solely on the basis of a comprehensive pediatric eye evaluation.

Recommendations for appropriate treatment and follow-up will vary with the patient. The Amblyopia Preferred Practice Patterns (PPP) and Esotropia and Exotropia PPP contain specific recommendations for management of these conditions (see the National Guideline Clearinghouse [NGC] summaries of the American Academy of Ophthalmology PPPs [Amblyopia](#) and [Esotropia and exotropia](#)).

Optical correction should be considered if the visual acuity can be improved, if ocular alignment can be improved, to prevent or treat amblyopia, to treat strabismus, or if the patient has asthenopia. [A:III] The goals when prescribing eyeglasses for young children are to achieve good vision, straight eyes, normal binocular vision, and acceptance of the eyeglasses.

Table: Indications for Referral for a Comprehensive Pediatric Ophthalmic Evaluation

Indication	Specific Examples
Risk factors (general health problems, systemic disease, or use of medications that are known to be associated with eye disease and visual abnormalities)	<ul style="list-style-type: none">• Prematurity (birth weight less than 1500 grams or gestational age 30 weeks or less)• Retinopathy of prematurity• Intrauterine growth retardation• Perinatal complications (evaluation at birth and at 6 months)• Neurological disorders or neurodevelopmental delay (upon diagnosis)• Juvenile rheumatoid arthritis (upon diagnosis)

Indication	Specific Examples
	<ul style="list-style-type: none"> • Thyroid disease • Cleft palate or other craniofacial abnormalities • Diabetes mellitus (5 years after onset) • Systemic syndromes with known ocular manifestations (at 6 months or upon diagnosis) • Chronic systemic steroid therapy or other medications known to cause eye disease • Suspected child abuse
<p>A family history of conditions that cause or are associated with eye or vision problems</p>	<ul style="list-style-type: none"> • Retinoblastoma • Childhood cataract • Childhood glaucoma • Retinal dystrophy/degeneration • Strabismus • Amblyopia • Eyeglasses in early childhood • Sickle cell disease • Systemic syndromes with ocular manifestations • Any history of childhood blindness not due to trauma in a parent or sibling
<p>Signs or symptoms of eye problems by history or</p>	<ul style="list-style-type: none"> • Defective ocular fixation or visual interactions • Abnormal light

Indication	Specific Examples
observations by family members*	<p>reflex (including both the corneal light reflections and the red fundus reflection)</p> <ul style="list-style-type: none"> • Abnormal or irregular pupils • Large and/or cloudy eyes • Drooping eyelid • Lumps or swelling around the eyes • Ocular alignment or movement abnormality • Nystagmus (shaking of eyes) • Persistent tearing, ocular discharge • Persistent or recurrent redness • Persistent light sensitivity • Squinting/eye closure • Persistent head tilt • Learning disabilities or dyslexia

Note: These recommendations are based on panel consensus.

*"Headache" is not included since it is rarely caused by eye problems in children. This complaint should first be evaluated by the primary care physician.

Table. Recommended Ages and Methods for Pediatric Eye Evaluation Screening

Recommended Age	Method	Indications for Referral to an Ophthalmologist
Newborn to 3 months	Red reflex	Absent, white, dull, opacity, or asymptomatic

	External inspection	Structural abnormality
	Pupil examination	Irregular shape, unequal size, poor or unequal reaction
3 to 6 months (approximately)	Fix and follow	Failure to fix and follow in a cooperative infant
	Red reflex	Absent, white, dull, opacity, or asymptomatic
	External inspection	Structural abnormality
	Pupil examination	Irregular shape, unequal size, poor or unequal reaction
6 to 12 months and until child is able to cooperate for verbal visual acuity	Fix and follow with each eye	Failure to fix and follow
	Alternate occlusion	Failure to object equally to covering each eye
	Corneal light reflex	Asymmetric or displaced
	Red reflex	Absent, white, dull, opacity, or asymptomatic
	External inspection	Structural abnormality
	Pupil examination	Irregular shape, unequal size, poor or unequal reaction

3 years and 4 years (approximately)	Visual acuity* (monocular)	20/50 or worse, or 2 lines of difference between the eyes
	Corneal light reflection/cover- uncover	Asymmetric/ocular refixation movements
	Red reflex	Absent, white, dull, opacity, or asymptomatic
	External inspection	Structural abnormality
	Pupil examination	Irregular shape, unequal size, poor or unequal reaction
5 years (approximately)	Visual acuity* (monocular)	20/40 or worse, or 2 lines of difference between the eyes
	All other tests and referral indications are as in age 3 and 4 years.	
Every 1 to 2 years after age 5	Visual acuity* (monocular)	20/30 or worse, or 2 lines of difference between the eyes
	All other tests and referral indications are as in age 3 and 4 years	

Note: These recommendations are based on panel consensus. Although the child may be retested if screening is inconclusive or unsatisfactory, undue delays should be avoided; if inconclusive on retesting, referral for a comprehensive pediatric ophthalmic evaluation is indicated. [A:III]

*Figures, letters, "tumbling E" or optotypes, LEA symbols (Precision Vision, Inc., La Salle, IL), vision testing machines.

Table: Consensus Guidelines for Prescribing Eyeglasses for Young Children [A:III]

Condition	Diopters		
	Age 0-1 year	Age 1-2 years	Age 2-3 years
Isometropia (similar refractive error in both eyes)			
Myopia	≥ -5.00	≥ -4.00	≥ -3.00
Hyperopia (no manifest deviation)*	$\geq +6.00$	$\geq +5.00$	$\geq +4.50$
Hyperopia with esotropia**	$\geq +3.00$	$\geq +2.00$	$\geq +1.50$
Astigmatism	≥ 3.00	≥ 2.50	≥ 2.00
Anisometropia			
Myopia	≥ -2.50	≥ -2.50	≥ -2.00
Hyperopia	$\geq +2.50$	$\geq +2.00$	$\geq +1.50$
Astigmatism	≥ 2.50	≥ 2.00	≥ 2.00
Additional Factors			
<ul style="list-style-type: none"> • History of previous amblyopia or strabismus surgery • Visual acuity • Acceptance of eyeglass wear • Possible accommodative esotropia/monofixation syndrome 			

Condition	Diopters		
	Age 0-1 year	Age 1-2 years	Age 2-3 years
<ul style="list-style-type: none"> • Medical comorbidities • Developmental delay 			

Note: These values were generated by consensus and are based solely on professional experience and clinical impressions, because there are no scientifically rigorous published data for guidance. The exact values are unknown and may differ among age groups; they are presented as general guidelines that must be tailored to the individual patient.

*May reduce the correction by up to 50% (but no more than 3.00 diopters) depending on the clinical situation.

**In higher hyperopes, reduction of the cycloplegic refraction may be necessary to achieve eyeglass acceptance.

Definitions:

Ratings of Importance to the Care Process

Level A, defined as most important

Level B, defined as moderately important

Level C, defined as relevant but not critical

Ratings of Strength of Evidence

Level I: Includes evidence obtained from at least one properly conducted, well-designed randomized controlled trial. It could include meta-analyses of randomized controlled trials.

Level II: Includes evidence obtained from the following:

- Well-designed controlled trials without randomization
- Well-designed cohort or case-control analytic studies, preferably from more than one center
- Multiple-time series with or without the intervention

Level III: Includes evidence obtained from one of the following:

- Descriptive studies
- Case reports

- Reports of expert committees/organization (e.g., Preferred Practice Patterns [PPP] Panel consensus with external peer review)

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

REFERENCES SUPPORTING THE RECOMMENDATIONS

[References open in a new window](#)

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified and graded for selected recommendations (see "Major Recommendations").

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- The purpose of periodic eye and vision screening is to detect pediatric eye disorders, especially amblyopia, at a sufficiently early age to allow effective treatment. The earlier amblyopia is detected and properly treated, the higher the likelihood of visual acuity recovery. Starting treatment at a young age may also increase the likelihood of compliance and the rate of vision recovery.
- The comprehensive pediatric ophthalmic evaluation can uncover abnormalities of a child's ocular and visual system (i.e., refractive errors, strabismus, cataracts, ptosis) that can lead to amblyopia and strabismus, among other disorders. Amblyopia can be treated effectively and permanent visual loss can be avoided if detected in early childhood.
- A comprehensive ophthalmic evaluation also may detect serious eye disorders such as ocular tumors (i.e., retinoblastoma), the treatment of which may be sight saving and life saving. The examination also can detect congenital eye abnormalities, some of which may be hereditary. Congenital eye abnormalities may indicate the presence of systemic disorders that affect general health or impede normal development. Childhood ocular and visual disorders are important to detect, because other family members or subsequent children may be at risk for the same disorder.

POTENTIAL HARMS

Not stated

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

- **Preferred Practice Patterns provide guidance for the pattern of practice, not for the care of a particular individual.** While they should generally meet the needs of most patients, they cannot possibly best meet the needs of all patients. Adherence to these Preferred Practice Patterns will not ensure a successful outcome in every situation. These practice patterns should not be deemed inclusive of all proper methods of care or exclusive of other methods of care reasonably directed at obtaining the best results. It may be necessary to approach different patients' needs in different ways. The physician must make the ultimate judgment about the propriety of the care of a particular patient in light of all of the circumstances presented by that patient. The American Academy of Ophthalmology is available to assist members in resolving ethical dilemmas that arise in the course of ophthalmic practice.
- **Preferred Practice Patterns are not medical standards to be adhered to in all individual situations.** The Academy specifically disclaims any and all liability for injury or other damages of any kind, from negligence or otherwise, for any and all claims that may arise out of the use of any recommendations or other information contained herein.
- References to certain drugs, instruments, and other products are made for illustrative purposes only and are not intended to constitute an endorsement of such. Such material may include information on applications that are not considered community standard, that reflect indications not included in approved Food and Drug Administration (FDA) labeling, or that are approved for use only in restricted research settings. The FDA has stated that it is the responsibility of the physician to determine the FDA status of each drug or device he or she wishes to use, and to use them with appropriate patient consent in compliance with applicable law.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Living with Illness
Staying Healthy

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

American Academy of Ophthalmology Pediatric Ophthalmology/Strabismus Panel. Pediatric eye evaluations: I. Screening; II. Comprehensive ophthalmic evaluation. San Francisco (CA): American Academy of Ophthalmology; 2007. 32 p. [89 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

1992 Jun (revised 2007 Sep)

GUIDELINE DEVELOPER(S)

American Academy of Ophthalmology - Medical Specialty Society

SOURCE(S) OF FUNDING

American Academy of Ophthalmology without commercial support

GUIDELINE COMMITTEE

Pediatric Ophthalmology/Strabismus Panel, Preferred Practice Patterns Committee

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Members of the Pediatric Ophthalmology/Strabismus Panel: Linda M. Christmann, MD, Chair; Patrick J. Droste, MD; Sheryl M. Handler, MD, American Association for Pediatric Ophthalmology and Strabismus Representative; Richard A. Saunders, MD; R. Grey Weaver, Jr., MD; Susannah G. Rowe, MD, MPH, Methodologist; Norman Harbaugh, MD, FAAP, American Academy of Pediatrics Representative; Donya A. Powers, MD, American Academy of Family Physicians Representative

Members of the Preferred Practice Patterns Committee: Sid Mandelbaum, MD, Chair; Emily Y. Chew, MD; Linda M. Christmann, MD; Douglas E. Gaasterland, MD; Samuel Masket, MD; Stephen D. McLeod, MD; Christopher J. Rapuano, MD; Donald S. Fong, MD, MPH, Methodologist

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

This author has disclosed the following financial relationships from January 2006 to August 2007:

Norman Harbaugh, MD, FAAP: Kids First – Grant support. Kids Time – Equity owner. Medimmune –Lecture fees. Centers for Disease Control, Merck, United Healthcare – Consultant/Advisor

GUIDELINE STATUS

This is the current release of the guideline.

It updates a previous version: American Academy of Ophthalmology Pediatric Ophthalmology Panel. Pediatric eye evaluations. San Francisco (CA): American Academy of Ophthalmology; 2002 Oct. 22 p. [36 references]

All Preferred Practice Patterns are reviewed by their parent panel annually or earlier if developments warrant and updated accordingly. To ensure that all Preferred Practice Patterns are current, each is valid for 5 years from the "approved by" date unless superseded by a revision.

GUIDELINE AVAILABILITY

Electronic copies: Available from the [American Academy of Ophthalmology \(AAO\) Web site](#).

Print copies: Available from American Academy of Ophthalmology, P.O. Box 7424, San Francisco, CA 94120-7424; telephone, (415) 561-8540.

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on June 30, 1998. The information was verified by the guideline developer on December 1, 1998. This summary was updated on March 12, 2003. The updated information was verified by the guideline developer on April 2, 2003. This NGC summary was updated by ECRI Institute on February 6, 2008. The updated information was verified by the guideline developer on February 27, 2008.

COPYRIGHT STATEMENT

This NGC summary is based on the original guideline, which is subject to the guideline developer's copyright restrictions. Information about the content, ordering, and copyright permissions can be obtained by calling the American Academy of Ophthalmology at (415) 561-8500.

DISCLAIMER

NGC DISCLAIMER

The National Guideline Clearinghouse™ (NGC) does not develop, produce, approve, or endorse the guidelines represented on this site.

All guidelines summarized by NGC and hosted on our site are produced under the auspices of medical specialty societies, relevant professional associations, public or private organizations, other government agencies, health care organizations or plans, and similar entities.

Guidelines represented on the NGC Web site are submitted by guideline developers, and are screened solely to determine that they meet the NGC Inclusion Criteria which may be found at <http://www.guideline.gov/about/inclusion.aspx>.

NGC, AHRQ, and its contractor ECRI Institute make no warranties concerning the content or clinical efficacy or effectiveness of the clinical practice guidelines and related materials represented on this site. Moreover, the views and opinions of developers or authors of guidelines represented on this site do not necessarily state or reflect those of NGC, AHRQ, or its contractor ECRI Institute, and inclusion or hosting of guidelines in NGC may not be used for advertising or commercial endorsement purposes.

Readers with questions regarding guideline content are directed to contact the guideline developer.

© 1998-2008 National Guideline Clearinghouse

Date Modified: 9/15/2008

